

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Continental Resources, Inc.
Well Name/Number: Farnsworth 1-18H
Location: NW NE Section 18 T26N R54E
County: Richland, **MT;** **Field (or Wildcat)** W/C Bakken Horizontal

Air Quality

(possible concerns)

Long drilling time: No, 30 to 40 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a single lateral Bakken Formation well to 19,267' MD/9379' TVD.

Possible H₂S gas production: Slight chance of H₂S gas production.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: No special concerns – using triple rig to drill a single lateral Bakken Formation well to 19,267' MD/9379' TVD. Gas plant availability to take sweet gas.

Water Quality

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling mud system will be used on the intermediate casing hole and saltwater for the horizontal lateral hole. Freshwater and freshwater mud system will be used on the surface hole.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, closest drainage is an unnamed ephemeral tributary drainage to Hanson Creek, about 1/8 of a mile to the southwest from this location.

Water well contamination: No, closest water wells are about 5/8 of a mile to the southeast, 3/4 of a mile to the east, 3/4 of a mile to the south southeast and 7/8 of a mile to the southwest from this location. Depth of these water wells range from 75' to 320'.

Surface hole will be drilled with freshwater and freshwater drilling fluids to 1155'.

Surface casing will be set and cemented from 1155' to surface.

Porous/permeable soils: No, silty sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☐ Closed mud system

☐ Off-site disposal of solids/liquids (in approved facility)

☐ Other: _____

Comments: 1155' of surface casing cemented to surface adequate to protect freshwater zones and to cover the Fox Hills Formation.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated, will utilize existing county road, #146.

High erosion potential: Yes possible high erosion on fill slope, moderate cut, up to 12.6' and moderate fill, up to 20.2' required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, 500'X270' location size required.

Damage to improvements: Slight, surface use is grassland adjacent to cultivated land.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☐ Other _____

Comments: Will use existing county road, #146. A short access of about 99' will be built into this location off the existing county road, #146. Oil based invert drilling fluids will be recycled. Cuttings and mud solids will be buried in the lined pit after being allowed to dry. Completion fluids will be trucked to a Class II disposal. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1 mile to the northeast and 1 5/8 of a mile to the east northeast from this location.

Possibility of H2S: Slight chance H2S.

Size of rig/length of drilling time: Triple drilling rig/ 30 to 40 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface and operational BOP should mitigate any problems. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No

Threatened or endangered Species: Species identified as threatened by the USFWS are Pallid Sturgeon, Interior Lease Tern, Piping Plover and Whooping Crane. Species listed as candidate species are the Greater Sage Grouse and Sprague's Pipit. NH

tracker website for this Township and Range lists only one (1) species of concern as the Eastern Red Bat.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface lands. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private surface lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: No concerns

Remarks or Special Concerns for this site

Well is a single lateral Bakken Formation 19,267' MD/9379' TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impact expected, some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: November 14, 2011

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website

(Name and Agency)

Richland County water wells

(subject discussed)

November 14, 2011

(date)

US Fish and Wildlife, Region 6 website

(Name and Agency)

ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County

(subject discussed)

November 14, 2011

(date)

Montana Natural Heritage Program Website (FWP)

(Name and Agency)

Heritage State Rank= S1, S2, S3, T26N R54E

(subject discussed)

November 14, 2011

(date)

If location was inspected before permit approval:

Inspection date: ____

Inspector: _____

Others present during inspection: _____